

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

**WSOU INVESTMENTS LLC D/B/A
BRAZOS LICENSING AND
DEVELOPMENT,**

Plaintiff,

v.

**ZTE CORPORATION, ZTE (USA) INC.
AND ZTE (TX), INC.,**

Defendants.

C.A. NO. 6:20-cv-00490-ADA

C.A. NO. 6:20-cv-00491-ADA

C.A. NO. 6:20-cv-00493-ADA

C.A. NO. 6:20-cv-00497-ADA

DEFENDANTS' RESPONSIVE CLAIM CONSTRUCTION BRIEF

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Pursuant to the Court’s First Amended Scheduling Order (Dkt. No. 45)¹ and the Court’s February 26, 2021 e-mail order, Defendants ZTE Corporation, ZTE (USA) Inc., and ZTE (TX), Inc. (collectively “ZTE”) hereby submits the following opening responsive claim construction brief pursuant to the Order Governing Proceedings (“OGP”).

I. Introduction

Plaintiff WSOU Investments, LLC d/b/a Brazos License and Development (“WSOU”) asserts eleven patents in *eleven* separate cases. In order to circumvent the OGP standards for claim construction term limits and briefing page limits, and in order to circumvent reducing the number of asserted claims in these cases (WSOU maintains and asserts at least 140 claims), WSOU insisted on consolidating all eleven different patents into unrelated groupings for this claim construction briefing. *See* Dkt. 60, Exs. 1-2. As such, four patents—U.S. Patent Nos. 7,203,505; 8,179,960; 8,730,905; and 9,294,060—are briefed herein.

None of these four patents share a common specification, and each is directed towards different technology—despite WSOU’s insistence on these technical groupings (with reduced terms and briefing). For instance, first, the ’505 patent is directed towards **transferring data messages between a first terminal device to a third device**. The ’505 patent at 1:7-12. Second, the ’960 patent is directed towards **block-based video coding and decoding**. The ’960 patent at 1:15-58. Third, the ’905 patent is directed towards **acquiring transmission resources during a transmission period**. The ’905 patent at Abstract. Fourth, the ’060 patent is directed towards **extending the bandwidth of an audio signal**. The ’060 patent at 1:5-8.

¹ There are 11 pending cases. Citations throughout refer to new WDTX Case Nos. -00487 through -00497, and specific citations reference to the docket for WDTX Case No. -00487.

Nevertheless, many of the claims are written in functional language without sufficient structure for performing those functions, rendering them subject to 35 U.S.C. § 112(f).² Additionally, because the specifications lack disclosure for performing most of those claimed functions, those claims are indefinite. In some instances, the specifications further fail to provide sufficient support under § 112(a) or § 112(b) and are further indefinite for those reasons. For several other terms, Defendants propose constructions consistent with their use in the intrinsic record, rather than—as WSOU seeks—divorcing them from that context.

II. Legal Standards

A. Claim Construction

The general rule is that claim terms are generally given their plain-and-ordinary meaning. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014), *vacated on other grounds*, 575 U.S. 959, 959 (2015). And, the plain and ordinary meaning of a term is the “meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Philips*, 415 F.3d at 1313.

There are two exceptions, however, to this general rule that terms are generally given their plain-and-ordinary meaning. The two exceptions are when the patentee (1) acts as his/her own lexicographer or (2) disavows the full scope of the claim term either in the specification or during prosecution. *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). To act as his/her own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “clearly express an intent to define the term.” *Id.* To disavow the full scope of a

² For consistency, Defendants’ references to § 112(a), (b), or (f) are synonymous with § 112(1), (2), or (6) and not intended to reflect any specific meaning to respective patent priority dates and application of AIA or Pre-AIA law.

claim term, the patentee's statements in the specification or prosecution history must represent "a clear disavowal of claim scope." *Id.* at 1366. Accordingly, when "an applicant's statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable." *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

Additionally, extrinsic evidence may be useful in determining the meaning of claim terms, albeit it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)). Technical dictionaries may also be helpful. *Id.* at 1318.

B. Indefiniteness

It is undisputed that patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. Further, "indefiniteness is a question of law and in effect part of claim construction." *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012). A claim, when viewed in light of the intrinsic evidence, must "inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). This requirement is necessary so that others of skill in the art will have fair notice as to what is off limits in the field and what is available for exploration. *Halliburton Energy Servs. V. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008). Failure to comply with this requirement results in invalidity of the patent. If not, the claim fails § 112, ¶ 2 and is invalid as indefinite. *Nautilus* at 901.

C. Written Description

The Patent Act further states, under 35 U.S.C. § 112, ¶ 1, that "[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same." 35 U.S.C. § 112,

¶ 1. “The test for the sufficiency of the written description ‘is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.’” *Vasudevan Software v. MicroStrategy, Inc.*, 782 F.3d 671, 682 (Fed. Cir. 2015) (quoting *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (*en banc*)). “[T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art.” *Vasudevan*, 782 F.3d at 682 (citing *Ariad*, 598 F.3d at 1351). Whether the written description adequately supports a patent claim is a question of fact. *Id.* (citing *Ariad*, 598 F.3d at 1355). “A party must prove invalidity for lack of written description by clear and convincing evidence.” *Id.*

III. Preliminary Issues

A. Sufficient Notice of Indefiniteness Theory Provided

WSOU generally alleges that “ZTE [] failed to provide any notice as to any indefiniteness theory,” for several terms below. *See e.g.*, WSOU Opening Brief, pp. 6-7. This is incorrect. Not only is this allegation patently false—as discussed below Defendants provided ample notice, but WSOU provides no case law indicating the level of notice provided was insufficient (because the notice was sufficient).

First, Defendants provided ample notice of the indefiniteness theories below. For instance, in Defendants’ Invalidity Contentions dated January 6, 2021, Defendants clearly identified the terms below as indefinite. *See* WSOU Opening Brief, Ex. A, pp. 52-63. This is a sufficient notice. Nevertheless, Defendants further identified the terms below for indefiniteness in the subsequent January 22, 2021 Proposed Terms for Claim Construction (Ex. 1), the February 12, 2021 Proposed Claim Constructions (Ex. 2), the February 19, 2021 Disclosure of Extrinsic Evidence (Ex. 3), the February 26, 2021 Narrowed Claim Terms (Ex. 4), and the March 2, 2021 Second Narrowed Claim Terms (Ex. 5). *See also* Dkt. 60, Exs. 1-2. In fact, *WSOU* itself even generated a claim summary

chart listing these indefiniteness terms below for each respective patent and presented it to the Court. *See* Dkt. 60, Ex. 1 (February 12, 2021 Emails from WSOU explaining chart supporting WSOU’s position for consolidated terms and briefing); *see also* Ex. 6. Given this plethora of notice, it is now improper for WSOU to allege “absence of *any* notice,” and the Court should disregard WSOU’s argument. WSOU Opening Brief, p. 6.

Second, Defendants clearly indicated that these terms failed “to satisfy the requirements of § 112(b) because the claims fail to point out and distinctly claim the subject matter which the inventors regard as the alleged invention.” *See* WSOU Opening Brief, Ex. A, pp. 52-63. There is no other theory or standard, under both AIA and pre-AIA, for determining whether a claim is definite or indefinite. Therefore, WSOU is incorrect because sufficient notice was provided and WSOU is not prejudiced.

Lastly, in view of the ample notice discussed above, and considering that WSOU only *first* raised any notice issue now for this briefing, it is clear that WSOU waived any notice objections. The proper time for notice objections—if at all—was the months prior to these claim construction briefings.

B. Expert Testimony Not Required

WSOU further erroneously alleges that Defendants “waived any reliance on expert testimony to support its position[s],” and therefore are unable to “possibly meet [their] burden” for several indefinite terms. *See e.g.*, WSOU Opening Brief. This is untrue, however, because the Federal Circuit made it clear that extrinsic evidence, such as expert testimony, *may be used*, but refrained from requiring expert testimony for proving invalidity for indefiniteness. *Spansion, Inc. v. Int’l Trade Comm’n*, 629 F.3d 1331, 1344 (Fed. Cir. 2010); *see also Lecat’s VentriloScope v. MT Tool & Mfg.*, 351 F. Supp. 3d 1100, 1113 (N.D. Ill. 2018) (finding that “expert testimony is not *per se* required” for indefiniteness and further finding that the “lack of expert testimony [] is

not fatal.”) In fact, courts routinely determine indefiniteness issues without supporting expert testimony. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377 (Fed. Cir. 2005) and *H-W Technology, L.C. v. Overstock.com, Inc.*, 758 F.3d 1329 (Fed. Cir. 2014) (both affirming district court rulings of indefiniteness without supporting expert testimony).

C. Enablement and Written Description Issues are Ripe for Analysis

WSOU incorrectly alleges that “this Court instructed ‘patent validity arguments like lack of enablement and lack of written description are not proper during claim construction proceedings.’” *See e.g.*, WSOU Opening Brief, p. 6. For this allegation, however, WSOU fails to reference any decision by *this* Court. *See USB Bridge Sols., LLC v. Buffalo Inc.*, 1-17-CV-001158-LY, 2020 WL 1906898, at *5 (W.D. Tex. Apr. 17, 2020). In contrast, *this* Court permits enablement and lack of written description analysis at the Claim Construction phase. *See Flash-Control, LLC v. Intel Corporation*, 2020 WL 4561591 (W.D. Tex. July 21, 2020) (Judge Albright ruling on enablement and lack of written description issues in Claim Construction Order). Thus, it is clear that *this* Court considers enablement and lack of written description issues ripe for analysis during claim construction.

Lastly, WSOU only *first* raised this written/description issue now for this briefing—well after this issue was raised and analyzed during the term reduction. *See* Dkt. 60, Ex. 1; *see also* Ex. 6. As such, WSOU waived any objections. The proper time for objection—if at all—was the months prior to these claim construction briefings.

IV. U.S. Patent No. 7,203,505 (Case No. 6:20-cv-00497-ADA)

A. Disputed Term 1: “a formatter to format the received data into at least one SMS (Short Message Service) message” “formatting” / “formatter to format” (Claims 1, 14, and 23)

WSOU’s Proposed Construction	Defendants’ Proposed Construction
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Plain and ordinary meaning	<p>“Governed by 35 U.S.C. § 112(f)</p> <p>Function: formatting the received data into at least one SMS (Short Message Service) message</p> <p>Indefinite under 35 U.S.C. § 112(b); specification fails to describe it</p> <p>Structure: none disclosed.”</p>
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First, Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

1. WSOU’s allegation that Defendants are seeking to construe two terms is incorrect.

First of all, WSOU’s allegation that Defendants are seeking to construe two terms here is incorrect. Defendants are seeking to construe the ‘formatter to format the received data into at least one SMS (Short Message Service) message’ or simply the ‘formatter to format’ under 35 U.S.C. § 112(f). The ‘formatting’ is performed by the ‘formatter to format’. Therefore, if there is a structure corresponding to the formatter, the structure is also the structure for the ‘formatting’. In other words, there is only one structure, if any. There are no two distinct terms to be construed here. Therefore, WSOU arguments fail.

2. The ’505 patent specification fails to describe the ‘formatter’.

Courts repeatedly emphasized the importance of the specification in claim constructions. For instance, Federal Circuit stated that “[c]laims must be read in view of the specification, of which they are a part.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc). The specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d at 1582, (Fed. Cir. 1996)). In the specification, a patentee may define a term to have a meaning that differs from the meaning that the term would otherwise possess. *Id.* The specification may

also reveal a patentee's intent to disavow claim scope. *Id.* Such intention is dispositive of claim construction. *Id.*

Therefore, determining whether the specification describes the claim terms to be construed are important for the claim construction. Here, the '505 patent specification does not describe the 'formatter'. "If the specification does not contain an adequate disclosure of the structure that corresponds to the claimed function, the patentee will have 'failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112,' which renders the claim invalid for indefiniteness." *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1382 (Fed. Cir. 2009) (quoting *In re Donaldson Co.*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (en banc)).

3. WSOU fails to point out structure for the 'formatter'.

WSOU argues that the claimed formatting is generic, well-known short message service (SMS) of modern-day mobile telephone. WSOU Opening Brief, pp. 5-6. Contrary to WSOU's arguments, during prosecution of the '505 patent, in response to the Office Action dated December 16, 2004, the Applicant vehemently argued that "formatting of data to be synchronized into an SMS messages" is "a fundamental feature of the present invention." See Ex. 13, Prosecution history, p. 72. "The prosecution history is another tool to supply the proper context for claim construction because it demonstrates how the inventor understood the invention." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005).

Although WSOU wipes out the fundamental feature of the alleged invention by arguing that the fundamental feature is merely generic, well-known SMS function of a modern-day mobile phone, WSOU's "structure" does not help to construe the term 'formatter', because WSOU fails to point out which part of the modern-day mobile phone is the structure of the claimed 'formatter'. WSOU merely points to the SMS function, rather than a specific structure of the mobile phone. As to the generic SMS function of a mobile phone, an SMS is sent from a sender to a recipient via

an SMS center, based on user subscriptions, but not directly from a sender to a recipient. Therefore, a POSITA would not understand the structure of the ‘formatter’ without disclosure of it in the specification. A POSITA would not even understand the claimed ‘formatter’ is hardware or software. As such, the claims defeat “the public notice function of patent claims.” *Halliburton Energy Servs. V. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008).

Further, courts have previously recognized that these similar terms connote functions, not structure. *See Widevine Techs., Inc. v. Verimatrix, Inc.*, 2009 WL 3734106, at *14-15 (E.D. Tex. 2009) (finding (1) “receiving a packet,” (2) “examining a payload portion of the packet ...,” (3) “communicating the selectively encrypted portions over the network in a packet”; (4) “receiving the communicated packet”; and (5) “parsing the received packet ...” to be functions that lacked algorithmic support).

Therefore, the terms ‘formatter’ and ‘formatting’ should be construed as means-plus-function terms under 35 U.S.C. § 112(f).

4. The Limitations are Governed by 35 U.S.C. § 112(f) and Fails to Provide Support for the Claimed Function

Because the limitations are governed by 35 U.S.C. § 112(f), the specification must disclose a clearly linked function. It does not. WSOU’s identification, WSOU Opening Brief, pp. 5-6, amounts to nothing more than a restatement of the claimed function, which is insufficient, because it says nothing about *how* to perform the claimed function. *See Blackboard*, 574 F.3d at 1383; *Function Media, LLC v. Google Inc.*, 708 F.3d at 1318–19 (Fed. Cir. 2013). Accordingly, the claim terms are indefinite.

B. Disputed Term 2: “data message receiver” (Claim 14)

WSOU’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“Indefinite under 35 U.S.C. § 112(b)”

	Lack of Written description under 35 U.S.C. § 112(a).”
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First, Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

Second, the ’505 patent specification does not describe the term ‘data message receiver’ at all. WSOU argues that the term should be given its plain and ordinary meaning because the data message receiver is a mobile terminal device capable of a communication link such as IR (infrared) or Bluetooth, without pointing out specific structure in the mobile terminal device. WSOU Opening Brief, pp. 7-8. This argument is incorrect.

IR communication or Bluetooth communication is not a generic function of a mobile terminal device. The generic function of a mobile terminal device is cellular communication. And yet, the ’505 patent specification fails to describe how the IR or Bluetooth communication is implemented in a mobile terminal device. Therefore, a POSITA would not even understand the claimed ‘data message receiver’ is hardware or software. As such, the claims defeat “the public notice function of patent claims.” *Halliburton Energy Servs. V. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008).

Therefore, the term ‘data message receiver’ lacks written support under 35 U.S.C. § 112(a), and/or is indefinite under § 112(b).

C. Disputed Term 3: “SMS (Short Message Service)” (Claims 1, 14, and 23)

WSOU’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“Cellular based messages of limited size consisting of text and numbers.”

At the time of the ’505 patent application, a mobile phone user could send several distinct types of messages. One type—the claimed “SMS messages”—would be understood by a person of ordinary skill to be cellular-based, *i.e.*, messages that are sent over the cellular network. Another

type of message—an IP-based message—would be understood by a person of ordinary skill to be a message sent over the Internet. Defendants’ construction—restricting the term to cellular-based messages—should be adopted for at least following reasons.

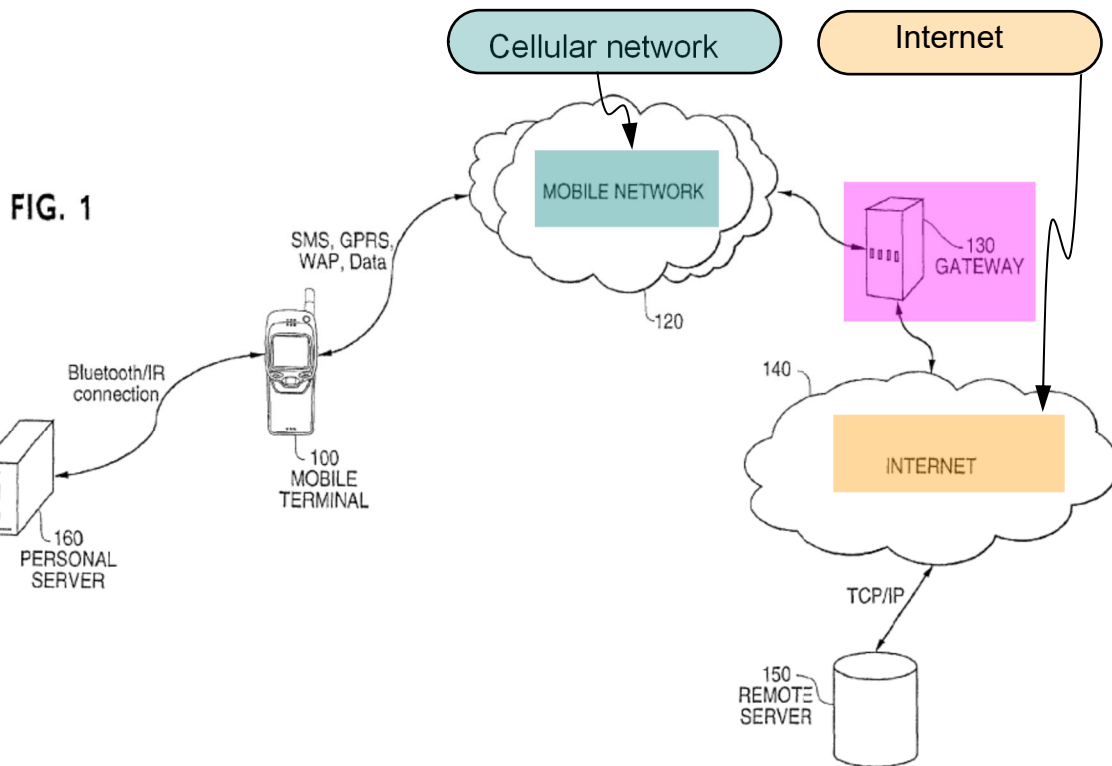
First, the ’505 patent specification describes SMS messages as cellular based messages of limited size of text. For instance, the relevant part of the ’505 patent specification describes (emphases added):

Modern-day mobile terminals, such as mobile telephones, have been provided with the SMS (Short Message Service) capability. SMS allows a single short message of **up to one hundred sixty characters of text in length** to be sent from a sender to a recipient. However, rather than requiring a continuous data connection, the SMS is a store and forward service, that is, short messages are not sent directly from sender to recipient but rather are sent via an intermediary SMS center instead. Each **mobile telephone network** that **supports SMS**, for example, has one or more SMS messaging centers to handle and manage SMS messages.

The ’505 patent, 1:65-2:9.

That is, the ’505 patent specification specifies that the SMS message is supported by mobile telephone network, i.e., cellular network. The ’505 patent specification also specifies that the SMS allows a single short message of up to one hundred sixty characters of text in length to be sent from a sender to a recipient. Therefore, the ’505 patent specification specifically defines the SMS messages as cellular based messages of limited size consisting of text. “[T]he specification 'acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.'” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d at 1582 (Fed. Cir. 1996); *Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004)).

Second, the specification distinguishes SMS messages transmission from other message types, such as IP-based messages. For example, as shown in annotated FIG. 1 below, the '505 patent specification describes SMS message is transmitted through mobile network 120 and then passed through a gateway 130 that is connected to an Internet 140.



The '505 patent, FIG. 1 (annotated)

That is, a gateway (a device that connects two or more dissimilar networks. *See* Ex. 12, Wiley-IEEE Electrical and Electronics Engineering Dictionary, p. 312 (2004) is required for conversion from a cellular based SMS message to IP-based message. The '505 patent, FIG. 1, 2:66-3:4. A person of ordinary skill would have therefore understood that SMS messages are “cellular based messages” of limited size consisting of text and numbers. *Phillips*, 415 F.3d at 1313 (Fed. Cir. 2005).

Therefore, the ‘SMS’ should be construed as cellular based messages of limited size consisting of text and numbers.

V. U.S. Patent No. 8,179,960 (Case No. 6:20-cv-00490-ADA)

A. Disputed Term 1: “virtual reference” (Claims 1, 2, 3, 9, 10, 15-17, 23, and 24)

WSOU’s Proposed Construction	Defendants’ Proposed Construction
a group of pixels (e.g., a block) that is used as reference material for encoding portions of the video signal (e.g., a motion-compensated inter-predicted block), but that does not comprise or represent any portion of the actual video sequence to be displayed.	A group of pixels used as reference material for encoding portions of the video signal, but that does not comprise or represent any portion of the actual video sequence to be displayed.

Both proposed claim constructions are based on the ’960 patent specification. The relevant descriptions of the ’960 patent specification are as follows:

A video codec is provided in which virtual reference data (e.g., virtual reference blocks) are advantageously employed by a video coder and decoder to significantly improve coding efficiency as compared to prior art codecs. Specifically, a “virtual reference,” as used herein, is defined as a group of pixels (e.g., a block) that is used as reference material for encoding portions of the video signal (e.g., a motion-compensated inter-predicted block), but that does not comprise or represent any portion of the actual video sequence to be displayed.

The ’960 patent, Abstract.

In construing the term ‘virtual reference’, Defendants did not include “a block” or “a motion-compensated inter-predicted block” from the description because the independent claims (i.e., claims 1, 9, 15, and 23) do not limit the ‘virtual reference’ data to a block. In fact, the

independent claims do not recite *any* block, and the claimed ‘virtual reference’ data can be a group of blocks or a frame, rather than a block.

It is well-known in the art that reference data in video coding can be a block, a group of blocks, a frame or a slice. The ’960 patent specification also uses a virtual reference frame (or slice) in exemplary embodiments. For example, the ’960 patent specification describes that “FIG. 1 shows a flow chart of a method of encoding a video signal with use of virtual reference data in accordance with the first illustrative embodiment of the present invention. Flowchart box 101 writes a frame (or slice) header indicating that this is a **virtual reference frame (or slice).**” The ’960 patent, 5:14-18 (emphasis added).

Now WSOU attempts to introduce “a block” or “a motion-compensated inter-predicted block” from the specification into the claims, to effectively rewrite claim 1. WSOU Opening Brief, pp. 10-11.

Redrafting the claims as proposed by WSOU should not be allowed here. The Federal Circuit has repeatedly held that “courts may not redraft claims to cure a drafting error made by the patentee, whether to make them operable or to sustain their validity.” *Lucent Technologies, Inc. v. Gateway, Inc.*, 525 F.3d 1200, 125-26 (Fed. Cir. 2008).

Therefore, the ‘virtual reference’ data should be construed as “a group of pixels used as reference material for encoding portions of the video signal, but that does not comprise or represent any portion of the actual video sequence to be displayed.”

B. Disputed Term 2: “does not represent any portion of any individual frame of the original video signal” (Claims 1, 9, 15, and 23)

WSOU’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“Data generated based on a portion of a video signal but not to be displayed with the video signal.”

This claim limitation is recited in independent claims 1, 9, 15, and 23. WSOU argues that the full phrase provides all of the context and requirements necessary. WSOU Opening Brief, p. 11. WSOU's argument is incorrect.

For instance, the full phrase recites that:

wherein the generated virtual reference data does not represent any portion of any individual frame of the original video signal which is to be displayed in said subsequent video display thereof;

The claim language does not provide enough description to discern the meaning of 'does not represent . . .,' as claimed. For instance, from the claim language only, this term could mean that the virtual reference data is generated without being based on any portion of any individual frame of the original video signal which is to be displayed in said subsequent video display. Or, alternatively, the claim language could mean that the virtual reference data does not contain any pointer or other indication indicating any portion of any individual frame of the original video signal which is to be displayed in said subsequent video display. Thus, construction is necessary.

Further, the use of the term 'individual' (as opposed to a group) is not clear. If the virtual reference data does not represent any portion of any *individual* frame of the original video signal, then it is unclear whether the virtual reference data represents any portion of any *group* of frames of the original video signal. A POSITA would not understand the meaning of "virtual reference data does not represent any portion of any individual frame of the original video signal which is to be displayed in said subsequent video display thereof."

Therefore, WSOU is incorrect, and claim construction is required here.

C. Disputed Term 3: "minimize differences" (Claims 3 and 17)

WSOU's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning	"Indefinite under 35 U.S.C. § 112(b)."

Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

The full phrase of the relevant claim (claims 3 and 17) recites:

generating the virtual reference data so as to minimize differences between said identified video blocks and the generated virtual reference data.

The phrase “minimize differences between said identified video blocks and the generated virtual reference data” is a term of degree. Therefore, the patent must provide “some standard for measuring that degree.” *Seattle Box Co. v. Indus. Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir. 1984).

WSOU argues that the ’960 patent specification provides the standard for minimizing the differences. WSOU Opening Brief, pp. 11-13. WSOU is incorrect. And WSOU’s briefing demonstrates the error—that the specification fails to provide a standard for *minimizing the differences*.

First, WSOU provides the following descriptions from the ’960 patent specification (to understand the context, Defendants also provide the portions that WSOU has omitted):

Most major standard video codecs (i.e., coders and decoders) achieve a data compression advantage over still image coding techniques by using a **block-based, motion-compensated prediction scheme**. Such schemes **are fully familiar to those of ordinary skill in the art and include**, for example, the **well known video coding standards** ITU-T/H.261, H.262, H.263, and H.264, and the corresponding ISO/IEC-11172 (MPEG-1), ISO/IEC 13818 (MPEG-2), ISO/IEC 14496 (MPEG-4/ASP), and ISO/IEC 14496-10 (MPEG-4/AVC).

The ’960 patent, 1:15-23 (emphases added).

This paragraph is the first paragraph of the Background of the invention of ’960 patent. This paragraph is merely an introductory description regarding the well-known block-based,

motion-compensated prediction scheme of standard video codecs such as ITU-T/H.261, H.262, H.263, H.264, ISO/IEC-11172 (MPEG-1), ISO/IEC 13818 (MPEG-2), ISO/IEC 14496 (MPEG-4/ASP), and ISO/IEC 14496-10 (MPEG-4/AVC).

However, the above listed video coding standards have nothing to do with *minimizing differences* between identified video blocks and generated virtual reference data. The description does not provide any guidance regarding how to determine the minimal difference between the identified video block and generated virtual reference data.

Second, WSOU also provides the following description:

Block-based schemes treat (typically rectangular) regions of pixels (i.e., picture elements) as a single unit, and typically encode such units using one of two broad methods. The first method is to independently code the block without reference to other blocks at all (i.e., “**intra-coding**”), or to code a block relative to some surrounding pixel values (i.e., “intra-prediction”). The second method is to code a block by providing a pointer to a similar, previously coded block which is used as a reference, and to further provide an error block that indicates the differences between the reference and the block to be coded (i.e., **inter-coding**).

The '960 patent, 1:24-34 (emphases added).

This paragraph is the second paragraph of the Background of the invention of '960 patent. Again, this paragraph is merely a general description about the well-known two different methods in a block-based coding, i.e., intra-coding and inter-coding. WSOU pointed to the inter-coding method.

However, the above general description has nothing to do with *minimizing differences* between identified video blocks and generated virtual reference data. The general description of the intra-coding scheme tells nothing about a minimal difference between the identified video blocks and generated virtual reference data.

Third, WSOU further provides the following description:

In the H.264 standard encoder, for example, the Context-Adaptive Variable Length Coding (CAVLC) entropy coder (which is also familiar to those skilled in the art) is used as a lossless compression method well suited for block-based video coding. In a typical case, the error is a quantized **difference between the discrete cosine transform (DCT) coefficients of the predicted pixels and the DCT coefficients of the actual pixels**. (The use of DCT coefficients in video coding is also fully familiar to those of ordinary skill in the art.) In general, the encoding is more efficient if there are many differences which are equal to zero, but it is still highly efficient if the (absolute value of the) difference of select non-zero terms is equal to 1. An occasional absolute difference greater than 1 in these select terms breaks the efficiency of the entropy coder and requires a disproportionately large number of bits to encode.

The '960 patent, 3:62-4:11 (emphasis added).

This paragraph merely describes the general feature of H.264 standard encoder. In particular, the difference mentioned in this paragraph is a difference between the discrete cosine transform (DCT) coefficients of the predicted pixels and the DCT coefficients of the actual pixels. This difference is quantized to serve as the error, and the encoding is more efficient if this difference is equal to zero.

However, the 'difference' described in the above-noted paragraph is completely different from the "difference between said identified video blocks and the generated virtual reference data", as recited in the claims. As such, this paragraph is completely irrelevant for determining the standard for minimizing differences between identified video blocks and generated virtual reference data, and does not describe what is the minimal difference between the identified video blocks and generated virtual reference data.

Therefore, WSOU fails to provide a portion of the specification—because there is none—that describes *the standard for minimizing the difference* between the identified video blocks and

generated virtual reference data, as recited in the claims. Indeed, the claims and specification do not give any indication as to how to determine when the difference between said identified video blocks and the generated virtual reference data is minimized.

Because the '960 patent fails to provide standards to guide a skilled artisan on the meaning of “minimal differences between said identified video blocks and the generated virtual reference data”, this term is insolubly ambiguous, rendering the phrase indefinite. *See, Secor View Techs. LLC v. Nissan N. Am., Inc., No. 12-3306 (FSH)*, 2013 WL 6147788, at 4 (D.N.J. Nov. 21, 2013) (determining that the term “minimize lateral protuberance from the side of the vehicle” was a term of degree, that the patent’s specification did not discuss the term, and that a POSITA “is not provided with a standard to determine when lateral protuberance becomes minimized.”); *see also Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249-50 (Fed. Cir. 2008); *see also Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363-64 (Fed. Cir. 2018) (affirming district court’s holding that the term “minimal redundancy” was indefinite as a term of degree because the specification lacked objective boundaries or examples of what constitutes “minimal”).

Therefore, the phrase “minimize differences between said identified video blocks and the generated virtual reference data” recited in the claims is indefinite.

VI. U.S. Patent No. 8,730,905 (Case No. 6:20-cv-00491-ADA)

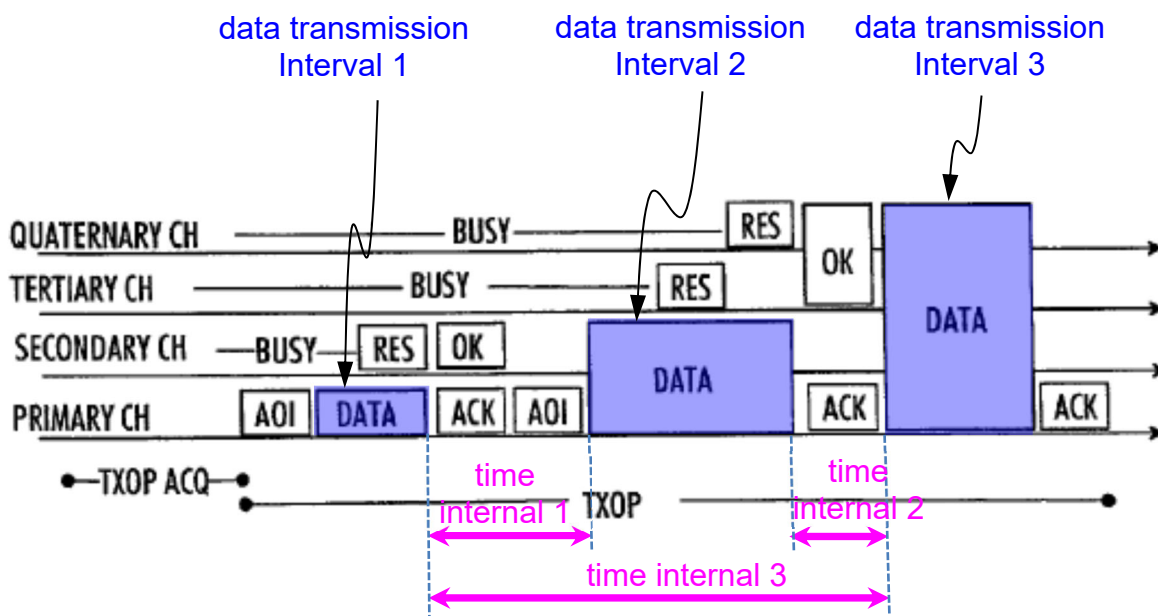
A. Disputed Term 1: “during a time interval between data transmission intervals during the transmission period” (Claims 4 and 15)

WSOU’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“Indefinite under 35 U.S.C. § 112(b).”

First, Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

Second, this phrase is recited in claims 4 and 15. WSOU argues that the claim language itself is fully descriptive. WSOU Opening Brief, p. 14. In particular, WSOU cites FIG. 3 of the '905 patent and argues that the figure illustrates that the reservation response message ("OK") is transmitted and received in a time period during the transmission period (TXOP) and between data transmission intervals (DATA). WSOU is incorrect.

As shown below in annotated FIG. 3 of the '905 patent, "a time interval between data transmission intervals during the transmission period" can be a time interval between consecutive data transmission intervals (e.g., the time interval 1 or the time interval 2 below) or a time interval between non-consecutive data transmission intervals (e.g., the time interval 3 below).



The '905 patent, FIG. 3 (annotated)

As demonstrated above, there is overlap between the time intervals and data transmissions which creates ambiguity for this term. For instance, if the reservation response message ("OK") is transmitted and received during the time interval 3 (e.g., long pink arrow above), the OK message can be transmitted during data transmission interval 2 (e.g., horizontal blue block), because the

data transmission interval 2 is within the time interval 3. Therefore, a POSITA would not understand whether the OK message is transmitted and received during a data transmission interval or during a time interval between data transmission intervals.

Therefore, WSOU's arguments fail and the phrase "during a time interval between data transmission intervals during the transmission period" is indefinite.

B. Disputed Term 2: "at least one frequency channel indicator" (Claims 5 and 16)

WSOU's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning	"Indefinite under 35 U.S.C. § 112(b)."

First, Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

Second, WSOU argues that the plain language of the full claim itself provides that the "at least one frequency channel indicator" is an indicator of at least one additional frequency band. WSOU Opening Brief, p. 15. WSOU is incorrect.

According to the claim language, the 'at least one' can specify the 'frequency channel', alternatively, can specify the 'indicator'. If, as shown in Scenario 1 below, the 'at least one' specifies the 'frequency channel', the claim language can be interpreted as a *single* indicator indicating one or more frequency bands. On the other hand, as shown in Scenario 2 below, if the 'at least one' specifies the 'indicator', the claim language can be interpreted as one or more indicators. Thus, these issues are compounded in the event there are a plurality of additional frequency bands, and it is not clear whether the claim refers to a single indicator indicating the plurality of additional frequency bands or a plurality of indicators indicating the plurality of additional frequency bands.

5. The method of claim 1, wherein the reservation request message comprises an identifier of the second wireless communication apparatus, and at least one frequency channel indicator indicating the at least one additional frequency band that is to be reserved by the second wireless communication apparatus.

Scenario 1: The '905 patent, Claim 5 (annotated)

5. The method of claim 1, wherein the reservation request message comprises an identifier of the second wireless communication apparatus, and at least one frequency channel indicator indicating the at least one additional frequency band that is to be reserved by the second wireless communication apparatus.

Scenario 2: The '905 patent, Claim 5 (annotated)

Therefore, WSOU's arguments fail and the phrase "at least one frequency channel indicator indicating the at least one additional frequency band that is to be reserved by the second wireless communication apparatus" is indefinite.

C. Disputed Term 3: "causing the transmission of the reservation message on each frequency band separately" (Claims 9 and 21)

WSOU's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning	"Indefinite under 35 U.S.C. § 112(b)."

First, Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

Second, the full phrase of the relevant claims (claims 9 and 21) recites:

wherein second wireless communication apparatus is requested to reserve a plurality of frequency bands, the method further

comprising causing the transmission of the reservation message on each frequency band separately.

WSOU argues that the claim language is self-explanatory, and that the term should be given its plain and ordinary meaning. WSOU Opening Brief, p. 16. WSOU is incorrect.

According to the claim language, the “reservation message” is separated into a plurality of portions and each portion is transmitted on a corresponding one of the plurality of frequency bands. However, it appears that WSOU argues that the claim means that each of the plurality of frequency bands transmits the same reservation message. WSOU Opening Brief, p. 16. Then it is unclear why the claim uses the term ‘separately’. The ’905 patent specification also fails to explain the meaning of the term ‘separately’.

Therefore, the term is “not amenable to construction” without a speculation or a blind guessing, and thus the term is indefinite. *See Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1353 (Fed. Cir. 2003).

The assertions made by WSOU would not cure the error made in drafting the claims and would not make the indefinite term become definite. The Federal Circuit has repeatedly held that “courts may not redraft claims to cure a drafting error made by the patentee, whether to make them operable or to sustain their validity.” *Lucent Technologies, Inc. v. Gateway, Inc.*, 525 F.3d 1200, 125-26 (Fed. Cir. 2008).

Because the scope of the claims is not “sufficiently definite to inform the public of the bounds of the protected invention,” the claims defeat the public notice function and the claims should be found invalid. *Halliburton Energy Servs. V. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008).

Therefore, WSOU's arguments fail and the phrase "causing the transmission of the reservation message on each frequency band separately" is indefinite.

VII. U.S. Patent No. 9,294,060 (Case No. 6:20-cv-00493-ADA)

A. Disputed Term 1: "extracting a feature vector" (Claims 1 and 10)

WSOU's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning	"Indefinite under 35 U.S.C. § 112(b)."

First, Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

Second, the full phrase of the relevant claims (claim 1 and similarly claim 10) recites:

extracting a feature vector from the audio signal, wherein the feature vector comprises at least one frequency domain component feature and at least one time domain component feature.

WSOU argues that the term should be given its plain and ordinary meaning. WSOU Opening Brief, pp. 18-19. WSOU is incorrect.

The primary issue is that the claim language and the specification fail to articulate "extracting." According to the claim language, a feature vector is *computed* in a first place and transmitted to a second place using the audio signal as carrier, so that the feature vector is extracted in the second place. It is well-known in the art that a carrier is an electromagnetic signal (such as the audio signal) at a continuous frequency capable of being modified to carry information (such as the feature vector). Therefore, 'extracting a feature vector from the audio signal' may indefinitely mean extracting a feature vector that is already computed somewhere and carried (transmitted) by the audio signal, rather than computing a feature vector.

WSOU provides numerous citations from the '060 patent specification but none of them explains the meaning of the term 'extracting' in the claims. A POSITA would not understand whether the "extracting a feature vector from the audio signal" means extracting an already computed feature vector from the audio signal or computing a feature vector using the audio signal.

Therefore, the term 'extracting a feature vector from the audio signal' is "not amenable to construction" without a speculation or a blind guessing, and thus the term is indefinite. *See Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1353 (Fed. Cir. 2003).

The assertions made by WSOU would not cure the error made in drafting the claims and would not make the indefinite term become definite. The Federal Circuit has repeatedly held that "courts may not redraft claims to cure a drafting error made by the patentee, whether to make them operable or to sustain their validity." *Lucent Technologies, Inc. v. Gateway, Inc.*, 525 F.3d 1200, 125-26 (Fed. Cir. 2008).

The scope of the claim largely depends on whether the term 'extracting a feature vector from the audio signal' is construed as computing a feature vector using audio signal or extracting a previously computed feature vector from the audio signal. Because the scope of the claims is not "sufficiently definite to inform the public of the bounds of the protected invention," the claims defeat the public notice function and the claims should be found invalid. *Halliburton Energy Servs. V. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008).

Therefore, the phrase "extracting a feature vector from the audio signal" is indefinite.

B. Disputed Term 2: "level value is attenuated" (Claims 1 and 10)

WSOU's Proposed Construction	Defendants' Proposed Construction
Plain and ordinary meaning	"Indefinite under 35 U.S.C. § 112(b)."

First, Defendants incorporate their arguments noted above for the Preliminary Issues in Section III.

Second, the full phrase of the relevant claims (claims 1 and 10) recites:

wherein the spectral shape parameter is a sub band energy level value and the sub band energy level value is attenuated when the power of the audio signal approaches an estimate of the level of noise in the audio signal.

WSOU argues that plain language of the claims themselves provide that the sub band energy level is reduced when the power of the audio signal approaches an estimate of the level of noise in the audio signal. WSOU Opening Brief, p. 20. WSOU is incorrect.

The claim fails to provide standards to guide a skilled artisan on the meaning of the attenuation. For instance, it is unclear whether 1% attenuation of the sub band energy level satisfies the claimed attenuation, or whether only 99% attenuation of the sub band energy level is the claimed attenuation—or somewhere in between such as 20% or more attenuation can be considered as the attenuation. Without providing a guidance for measuring the attenuation, “competitors cannot avoid infringement, defeating the public notice function of patent claims.” *Halliburton Energy Servs. V. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008). Additionally, the patent must provide “some standard for measuring that degree.” *Seattle Box Co. v. Indus. Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir. 1984).

WSOU also argues that the '060 patent specification provides exemplary embodiments showing the same. WSOU Opening Brief, p. 20. This assertion is incorrect.

The relevant portions of the specification describe:

In some embodiments the band energy smoother 411 can incorporate an additional processing step whereby the high band signal can be attenuated when the power of the input audio signal 404 (in other

words the low band signal or telephone band signal) is close to an adaptive noise level estimate.

...

The sub band energy levels associated with the current frame of the artificially generated high band signal 431 can in some embodiments be attenuated according to the difference between the energy of the current audio signal frame and the noise floor estimate using piecewise linear mapping.

The above described adaptive attenuation technique can in such embodiments have the advantage of reducing perceived noise in the artificially generated high band signal 431.” The ’060 patent, 18:8-43.

The band energy smoother 411 can in some embodiments filter the energy level for each sub band over current and past values. This may have the advantage of counteracting annoying artefacts which can be produced as a result of the neural network processor 409 selecting sub band energy levels which can in some embodiments be too high. In other words, the filtering of each sub band energy level may have the advantage of smoothing out any rapid changes. The ’060 patent, 17:34-40.

As shown above, the ’060 patent specification merely describes a sub band energy smoother and that the sub band energy levels are attenuated when the power of the input audio signal is close to an adaptive noise level estimate.

However, the ’060 patent specification does not provide *standards* for measuring the attenuation. Because the ’060 patent fails to provide standards to guide a skilled artisan on the meaning of “the sub band energy level value is attenuated when the power of the audio signal approaches an estimate of the level of noise in the audio signal”, it is insolubly ambiguous, rendering the phrase indefinite. *See, Secor View Techs. LLC v. Nissan N. Am., Inc., No. 12-3306 (FSH)*, 2013 WL 6147788, at 4 (D.N.J. Nov. 21, 2013); *see also Halliburton Energy Servs., Inc.*

v. M-I LLC, 514 F.3d 1244, 1249-50 (Fed. Cir. 2008); *see also Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363-64 (Fed. Cir. 2018).

Therefore, the phrase “the sub band energy level value is attenuated when the power of the audio signal approaches an estimate of the level of noise in the audio signal” is indefinite.

C. Disputed Term 3: “spectral shape parameter” (Claims 1 and 10)

WSOU’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning	“A sub band energy level value or a sub band gain factor based on the sub band energy level value”

WSOU argues that the claimed spectral shape parameter should not be limited to a sub band energy level value or a sub band gain factor based on the sub band energy level value. WSOU Opening Brief, p. 21. WSOU is incorrect.

Defendants’ proposed construction is based on the ’060 patent specification in which the claims are construed in context of. The relevant portion of the ’060 patent specification describes:

The spectral shape parameter may be a sub band energy level value.
The spectral shape parameter may be a sub band gain factor based
on the sub band energy level value. The ’060 patent, 2:55-58.

The ’060 patent specification fails to provide *any other type* of spectral shape parameter, thus the term should be construed narrowly as Defendants propose. WSOU attempts, however, to expand the scope of the claims beyond the disclosure of the ’060 patent. The only reasoning provided by WSOU is the patent drafting language, such as “may be” or “at least one,” yet WSOU fails to point to any other spectral shape parameters a PHOSITA may understand the specification to describe. WSOU Opening Brief, p. 21. Contrary to WSOU’s assertion, the specification only provides support for either a sub band gain factor or a sub band energy level value.

WSOU attempts to expand the scope of the claims without even providing technological context or sufficient enablement. WSOU Opening Brief, p. 21. As mentioned above, the '060 patent specification does not even name any spectral shape parameter other than the sub band energy level value and the sub band gain factor. WSOU also fails to provide any name of purported additional spectral shape parameters. Thus, WSOU attempts to expand the scope without a boundary and courts did not allow such improper expansion of the scope of the claims.

The Supreme Court stated that a claim is indefinite if, read in light of the intrinsic record, it fails to inform those skilled in the art about the scope of the invention with reasonable certainty. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). See also *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008) (“The scope of the claims must be less than or equal to the scope of the enablement to ensure that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.”) (internal quotes and citation omitted); see also *V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d at 1310 (Fed. Cir. 2005) (“[The intrinsic evidence] usually provides the technological and temporal context to enable the court to ascertain the meaning of the claim to one of ordinary skill at the time of the invention.”).

Therefore, this Court should not allow such improper expansion of the scope of the claims.

VIII. CONCLUSION

For the foregoing reasons, Defendants request that the Court adopt Defendants’ proposed constructions.

DATED: April 9, 2021

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system on April 9, 2021.

/s/ Lionel M. Lavenue

Lionel M. Lavenue